

**United States Environmental Protection Agency
Region 9 Laboratory****1337 S. 46th Street Building 201
Richmond, CA 94804**

Date: 7/3/2013

Subject: Analytical Testing Results - Project R13S76
SDG: 13172C

From: Brenda Bettencourt, Director
EPA Region 9 Laboratory MTS-2 *B. Bettencourt*

To: Kelly Manheimer
California Site Cleanup Section 3
SFD-7-3

Attached are the results from the analysis of samples from the **Tujunga Wellfield May 2013 IDW Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Caroline Carter, CH2MHill
John Lindquist, CH2MHill

Analyses included in this report:

| | |
|-----------------------------------|------------------------------|
| Alkalinity | Anions by Ion Chromatography |
| Perchlorate by Ion Chromatography | Sulfide by Titration |



United States Environmental Protection Agency Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone: (510) 412-2300 Fax: (510) 412-2302

Project Manager: Kelly Manheimer

Project Number: R13S76

Project: Tujunga Wellfield May 2013 IDW Sampling

California Site Cleanup Section 3

75 Hawthorne Street

San Francisco CA, 94105

SDG: 13172C

Reported: 07/03/13 14:43

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|-------------|---------------|--------|----------------|----------------|
| TJ-MW-09B | 1306055-01 | Water | 06/20/13 11:00 | 06/21/13 10:30 |
| TJ-MW-09DUP | 1306055-03 | Water | 06/20/13 11:05 | 06/21/13 10:30 |
| TJ-MW-09EB | 1306055-05 | Water | 06/20/13 14:30 | 06/21/13 10:30 |

SDG ID 13172C

Sulfide analysis: No additional sample bottle was received for sulfide matrix spike analysis. No lab quality control could be performed for sulfide analysis.

Work Order(s)

1306055



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Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analized Method |
|--|-------------------------|--------|--------------------------|-----------------------|-------|---------|----------|------------------------------|
| Lab ID: 1306055-01 | | | | | | | | |
| Sample ID: TJ-MW-09B | | | | | | | | |
| Water - Sampled: 06/20/13 11:00 | | | | | | | | |
| Conventional Chemistry Parameters by APHA/EPA Methods | | | | | | | | |
| Hydroxide Alkalinity | | ND | U | 10 | mg/L | B13F135 | 06/26/13 | 06/27/13 SM2320/SOP560 |
| Carbonate Alkalinity | | ND | U | 10 | " | " | " | SM2320/SOP560 |
| Bicarbonate Alkalinity | | 320 | | 10 | " | " | " | SM2320/SOP560 |
| Total Alkalinity | | 320 | | 10 | " | " | " | SM2320/SOP560 |
| Fluoride | RE2 | 0.24 | | 0.10 | " | B13F131 | 06/24/13 | 06/24/13 300.0/SOP 530 |
| Chloride | | 30 | J, Q4 | 1 | " | B13F109 | 06/21/13 | 06/21/13 300.0/SOP 530 |
| Nitrite as N | | ND | U | 0.10 | " | " | " | 300.0/SOP 530 |
| Nitrate as N | | 5.5 | | 0.10 | " | " | " | 300.0/SOP 530 |
| o-Phosphate, as P | | ND | U | 1 | " | " | " | 300.0/SOP 530 |
| Sulfate | RE1 | 120 | | 2.5 | " | " | " | 06/21/13 300.0/SOP 530 |
| Perchlorate | | 8.0 | J, Q4 | 2 | ug/L | B13F132 | 06/26/13 | 06/26/13 314.0/SOP531 |
| Sulfide | | ND | U | 0.98 | mg/L | B13F118 | 06/24/13 | 06/24/13 SM 4500 S2-/SOP 565 |
| Lab ID: 1306055-03 | | | | | | | | |
| Sample ID: TJ-MW-09DUP | | | | | | | | |
| Water - Sampled: 06/20/13 11:05 | | | | | | | | |
| Conventional Chemistry Parameters by APHA/EPA Methods | | | | | | | | |
| Hydroxide Alkalinity | | ND | U | 10 | mg/L | B13F135 | 06/26/13 | 06/27/13 SM2320/SOP560 |
| Carbonate Alkalinity | | ND | U | 10 | " | " | " | SM2320/SOP560 |
| Bicarbonate Alkalinity | | 320 | | 10 | " | " | " | SM2320/SOP560 |
| Total Alkalinity | | 320 | | 10 | " | " | " | SM2320/SOP560 |
| Fluoride | RE2 | 0.27 | | 0.10 | " | B13F131 | 06/24/13 | 06/24/13 300.0/SOP 530 |
| Chloride | | 30 | | 1 | " | B13F109 | 06/21/13 | 06/21/13 300.0/SOP 530 |
| Nitrite as N | | ND | U | 0.10 | " | " | " | 300.0/SOP 530 |
| Nitrate as N | | 5.5 | | 0.10 | " | " | " | 300.0/SOP 530 |
| o-Phosphate, as P | | ND | U | 1 | " | " | " | 300.0/SOP 530 |
| Sulfate | RE1 | 130 | | 2.5 | " | " | " | 06/21/13 300.0/SOP 530 |
| Perchlorate | | 8.8 | | 2 | ug/L | B13F132 | 06/26/13 | 06/26/13 314.0/SOP531 |
| Sulfide | | ND | U | 0.98 | mg/L | B13F118 | 06/24/13 | 06/24/13 SM 4500 S2-/SOP 565 |
| Lab ID: 1306055-05 | | | | | | | | |
| Sample ID: TJ-MW-09EB | | | | | | | | |
| Water - Sampled: 06/20/13 14:30 | | | | | | | | |
| Conventional Chemistry Parameters by APHA/EPA Methods | | | | | | | | |
| Hydroxide Alkalinity | | ND | U | 10 | mg/L | B13F135 | 06/26/13 | 06/27/13 SM2320/SOP560 |
| Carbonate Alkalinity | | ND | U | 10 | " | " | " | SM2320/SOP560 |
| Bicarbonate Alkalinity | | ND | U | 10 | " | " | " | SM2320/SOP560 |
| Total Alkalinity | | ND | U | 10 | " | " | " | SM2320/SOP560 |
| Fluoride | RE1 | ND | U | 0.10 | " | B13F131 | 06/24/13 | 06/24/13 300.0/SOP 530 |
| Chloride | | ND | U | 1 | " | B13F109 | 06/21/13 | 06/21/13 300.0/SOP 530 |
| Nitrite as N | | ND | U | 0.10 | " | " | " | 300.0/SOP 530 |
| Nitrate as N | | ND | U | 0.10 | " | " | " | 300.0/SOP 530 |
| o-Phosphate, as P | | ND | U | 1 | " | " | " | 300.0/SOP 530 |



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Project: Tujunga Wellfield May 2013 IDW Sampling

California Site Cleanup Section 3

75 Hawthorne Street

San Francisco CA, 94105

SDG: 13172C

Reported: 07/03/13 14:43

Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed Method |
|-------------------|-------------------------|--------|--------------------------|-----------------------|-------|---------|----------|--|
| Lab ID: | 1306055-05 | | | | | | | Water - Sampled: 06/20/13 14:30 |
| Sample ID: | TJ-MW-09EB | | | | | | | Conventional Chemistry Parameters by APHA/EPA Methods |
| Sulfate | | ND | U | 0.50 | mg/L | B13F109 | 06/21/13 | 06/21/13 300.0/SOP 530 |
| Perchlorate | | ND | U | 2 | ug/L | B13F132 | 06/26/13 | 06/26/13 314.0/SOP531 |
| Sulfide | | ND | U | 0.97 | mg/L | B13F118 | 06/24/13 | 06/24/13 SM 4500 S2-/SOP 565 |



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Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---------|--------|--------------------------|-----------------------|-------|----------------|------------------|------|----------------|-----|--------------|
|---------|--------|--------------------------|-----------------------|-------|----------------|------------------|------|----------------|-----|--------------|

Batch B13F109 - - General Inorganic - Anions

Prepared & Analyzed: 06/21/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F109-BLK1)

| | | | | | | | | | | |
|-------------------|----|---|-----|------|--|--|--|--|--|--|
| Fluoride | ND | U | 0.1 | mg/L | | | | | | |
| Chloride | ND | U | 1 | " | | | | | | |
| Nitrite as N | ND | U | 0.1 | " | | | | | | |
| Nitrate as N | ND | U | 0.1 | " | | | | | | |
| o-Phosphate, as P | ND | U | 1 | " | | | | | | |
| Sulfate | ND | U | 0.5 | " | | | | | | |

LCS (B13F109-BS1)

| | | | | | | | | | | |
|-------------------|------|--|-----|------|------|--|----|--------|--|-----|
| Chloride | 9.56 | | 1 | mg/L | 10.0 | | 96 | 90-110 | | 200 |
| Nitrite as N | 4.83 | | 0.1 | " | 5.00 | | 97 | 90-110 | | 200 |
| Nitrate as N | 4.91 | | 0.1 | " | 5.00 | | 98 | 90-110 | | 200 |
| o-Phosphate, as P | 9.61 | | 1 | " | 10.0 | | 96 | 90-110 | | 200 |
| Sulfate | 9.81 | | 0.5 | " | 10.0 | | 98 | 90-110 | | 200 |

Duplicate (B13F109-DUP1)

Source: 1306055-01RE1

| | | | | | | | | | | |
|---------|-----|--|-----|------|--|-----|--|--|---|----|
| Sulfate | 122 | | 2.5 | mg/L | | 124 | | | 1 | 20 |
|---------|-----|--|-----|------|--|-----|--|--|---|----|

Matrix Spike (B13F109-MS1)

Source: 1306055-01

| | | | | | | | | | | |
|-------------------|------|--|------|------|------|------|----|--------|--|----|
| Chloride | 37.9 | | 1.1 | mg/L | 11.0 | 29.6 | 75 | 80-120 | | 20 |
| Nitrite as N | 5.14 | | 0.11 | " | 5.49 | ND | 94 | 80-120 | | 20 |
| Nitrate as N | 10.7 | | 0.11 | " | 5.49 | 5.54 | 94 | 80-120 | | 20 |
| o-Phosphate, as P | 10.8 | | 1.1 | " | 11.0 | ND | 98 | 80-120 | | 20 |

Matrix Spike Dup (B13F109-MSD1)

Source: 1306055-01

| | | | | | | | | | | |
|-------------------|------|--|------|------|------|------|-----|--------|------|----|
| Chloride | 37.9 | | 1.1 | mg/L | 11.0 | 29.6 | 76 | 80-120 | 0.07 | 20 |
| Nitrite as N | 5.16 | | 0.11 | " | 5.49 | ND | 94 | 80-120 | 0.4 | 20 |
| Nitrate as N | 10.7 | | 0.11 | " | 5.49 | 5.54 | 94 | 80-120 | 0.2 | 20 |
| o-Phosphate, as P | 11.1 | | 1.1 | " | 11.0 | ND | 101 | 80-120 | 3 | 20 |

Batch B13F118 - Sulfide Prep - Sulfide

Prepared & Analyzed: 06/24/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F118-BLK1)

| | | | | | | | | | | |
|---------|----|---|---|------|--|--|--|--|--|--|
| Sulfide | ND | U | 1 | mg/L | | | | | | |
|---------|----|---|---|------|--|--|--|--|--|--|

LCS (B13F118-BS1)

| | | | | | | | | | | |
|---------|------|--|--|------|------|--|----|--------|--|-----|
| Sulfide | 9.87 | | | mg/L | 9.98 | | 99 | 80-120 | | 200 |
|---------|------|--|--|------|------|--|----|--------|--|-----|

Batch B13F131 - - General Inorganic - Anions

Prepared & Analyzed: 06/24/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F131-BLK1)

| | | | | | | | | | | |
|-------------------|----|---|-----|------|--|--|--|--|--|--|
| Fluoride | ND | U | 0.1 | mg/L | | | | | | |
| Chloride | ND | U | 1 | " | | | | | | |
| Nitrite as N | ND | U | 0.1 | " | | | | | | |
| Nitrate as N | ND | U | 0.1 | " | | | | | | |
| o-Phosphate, as P | ND | U | 1 | " | | | | | | |
| Sulfate | ND | U | 0.5 | " | | | | | | |

Blank (B13F131-BLK2)

| | | | | | | | | | | |
|----------|----|---|-----|------|--|--|--|--|--|--|
| Fluoride | ND | U | 0.1 | mg/L | | | | | | |
|----------|----|---|-----|------|--|--|--|--|--|--|



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Reported: 07/03/13 14:43

Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---------|--------|--------------------------|-----------------------|-------|----------------|------------------|------|----------------|-----|--------------|
|---------|--------|--------------------------|-----------------------|-------|----------------|------------------|------|----------------|-----|--------------|

Batch B13F131 - - General Inorganic - Anions

Prepared & Analyzed: 06/24/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F131-BLK2)

| | | | | | | | | | | |
|-------------------|----|---|-----|---|--|--|--|--|--|--|
| Chloride | ND | U | 1 | " | | | | | | |
| Nitrite as N | ND | U | 0.1 | " | | | | | | |
| Nitrate as N | ND | U | 0.1 | " | | | | | | |
| o-Phosphate, as P | ND | U | 1 | " | | | | | | |
| Sulfate | ND | U | 0.5 | " | | | | | | |

LCS (B13F131-BS1)

| | | | | | | | | | | |
|-------------------|-------|--|--|------|------|--|----|--------|--|-----|
| Fluoride | 0.896 | | | mg/L | 1.00 | | 90 | 90-110 | | 200 |
| o-Phosphate, as P | 9.6 | | | " | 10.0 | | 96 | 90-110 | | 200 |

Matrix Spike (B13F131-MS1)

Source: 1306055-01RE2

| | | | | | | | | | | |
|----------|------|--|------|------|------|-------|----|--------|--|----|
| Fluoride | 1.26 | | 0.11 | mg/L | 1.05 | 0.245 | 97 | 80-120 | | 20 |
|----------|------|--|------|------|------|-------|----|--------|--|----|

Matrix Spike Dup (B13F131-MSD1)

Source: 1306055-01RE2

| | | | | | | | | | | |
|----------|------|--|------|------|------|-------|----|--------|-----|----|
| Fluoride | 1.25 | | 0.11 | mg/L | 1.05 | 0.245 | 96 | 80-120 | 0.6 | 20 |
|----------|------|--|------|------|------|-------|----|--------|-----|----|

Batch B13F132 - - General Inorganic - Perchlorate

Prepared & Analyzed: 06/26/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F132-BLK1)

| | | | | | | | | | | |
|-------------|----|---|---|------|--|--|--|--|--|--|
| Perchlorate | ND | U | 2 | ug/L | | | | | | |
|-------------|----|---|---|------|--|--|--|--|--|--|

Blank (B13F132-BLK2)

| | | | | | | | | | | |
|-------------|----|---|---|------|--|--|--|--|--|--|
| Perchlorate | ND | U | 2 | ug/L | | | | | | |
|-------------|----|---|---|------|--|--|--|--|--|--|

LCS (B13F132-BS1)

| | | | | | | | | | | |
|-------------|------|--|--|------|------|--|----|--------|--|-----|
| Perchlorate | 9.79 | | | ug/L | 10.0 | | 98 | 85-115 | | 200 |
|-------------|------|--|--|------|------|--|----|--------|--|-----|

Matrix Spike (B13F132-MS1)

Source: 1306055-01

| | | | | | | | | | | |
|-------------|------|--|---|------|------|---|-----|--------|--|----|
| Perchlorate | 18.5 | | 2 | ug/L | 10.0 | 8 | 105 | 80-120 | | 15 |
|-------------|------|--|---|------|------|---|-----|--------|--|----|

Matrix Spike Dup (B13F132-MSD1)

Source: 1306055-01

| | | | | | | | | | | |
|-------------|------|--|---|------|------|---|-----|--------|---|----|
| Perchlorate | 20.1 | | 2 | ug/L | 10.0 | 8 | 121 | 80-120 | 9 | 15 |
|-------------|------|--|---|------|------|---|-----|--------|---|----|

Batch B13F135 - Alkalinity - Alkalinity

Prepared: 06/26/13 Analyzed: 06/27/13

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Blank (B13F135-BLK1)

| | | | | | | | | | | |
|------------------------|----|---|----|------|--|--|--|--|--|--|
| Hydroxide Alkalinity | ND | U | 10 | mg/L | | | | | | |
| Carbonate Alkalinity | ND | U | 10 | " | | | | | | |
| Bicarbonate Alkalinity | ND | U | 10 | " | | | | | | |
| Total Alkalinity | ND | U | 10 | " | | | | | | |

LCS (B13F135-BS1)

| | | | | | | | | | | |
|------------------|----|--|--|------|------|--|----|--------|--|-----|
| Total Alkalinity | 52 | | | mg/L | 52.6 | | 99 | 85-115 | | 200 |
|------------------|----|--|--|------|------|--|----|--------|--|-----|

Duplicate (B13F135-DUP1)

Source: 1306055-01

| | | | | | | | | | | |
|------------------------|-----|---|----|------|--|-----|--|--|-----|----|
| Hydroxide Alkalinity | ND | U | 10 | mg/L | | ND | | | | 20 |
| Carbonate Alkalinity | ND | U | 10 | " | | ND | | | | 20 |
| Bicarbonate Alkalinity | 320 | | 10 | " | | 318 | | | 0.3 | 20 |
| Total Alkalinity | 320 | | 10 | " | | 318 | | | 0.3 | 20 |



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Qualifiers and Comments

Q4 The matrix spike and/or matrix spike duplicate associated with this sample did not meet recovery criteria for this analyte (see MS/MSD results for this batch in QC summary)

J The reported result for this analyte should be considered an estimated value.

U Not Detected

NR Not Reported

RE1, RE2, etc: Result is from a sample re-analysis.